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Fishes

NATURAL HISTORY ILLUSTRATIONS.

PREPARED UNDER THE DIRECTION OF LOUIS AGASSIZ AND SPENCER F. BAIRD.

1849.

SIX SPECIES

OF

NORTH AMERICAN FRESH-WATER FISHES.

SIX LITHOGRAPHS FROM DRAWINGS BY A. SONREL.

EXPLANATION OF PLATES BY DAVID STARR JORDAN.

CITY OF WASHINGTON:
PUBLISHED BY THE SMITHSONIAN INSTITUTION.
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ADVERTISEMENT.

The six plates of American fresh-water Fishes herewith presented, like the plates of *Astrangia Danæ* recently issued by the Smithsonian Institution, are published, not primarily on account of any new knowledge which they are supposed to convey, but as a memorial of a project undertaken early in the history of American science, by two of the most eminent naturalists this country has ever possessed.

They will not be included in the series of Contributions of Knowledge, but are intended for distribution among those who will prize them on account of their historical associations.

S. P. LANGLEY,
Secretary.

Smithsonian Institution,
Washington, D. C., *March* 22, 1889.

INTRODUCTORY NOTE.

The accompanying plates of fresh-water fishes were drawn by Mr. Sonrel under the direction of Professor Agassiz and Professor Baird as early as 1849, and were intended for use in a Monograph of the fresh-water Fishes of North America projected by the Swiss naturalist and the young Assistant Secretary of the Smithsonian Institution, to be prepared under their joint authorship. The work was never completed, the attention of each of the partners having been diverted to other subjects. An edition of 1,000 copies of these plates was printed, and, after the lapse of nearly forty years, it seems desirable to distribute them to the libraries. Their interest is mainly of a historical character, and the accompanying text, prepared by President Jordan, is limited to a brief explanation of the figures.

G. BROWN GOODE.

SMITHSONIAN INSTITUTION,
March 22, 1889.

CYPRINIDÆ. Plate 1.

NOTROPIS MEGALOPS (*Rafinesque*).

HYPSOLEPIS PLARGYRUS. Baird.

The Common Shiner; Red-fin; Roach.

(Female.)

Fig. 1. Side view of skull.
2. View of skull from above.
3. View of skull from below.
4. View of skull from behind.
5. Lower pharyngeals with teeth.
6. Right lower pharyngeal bone.
7. Outline of section of body at dorsal fin.
8. Scale from the lateral line.
9. Scale from above lateral line.
10. Scale from below lateral line.
11. Young example.
12. Outline of adult seen from above.
13. Female example, nearly adult.

The Shiner is one of our commonest brook fishes, its range extending from Maine to Dakota, and southward to North Carolina, Georgia, and Arkansas. It is of no value as food, though it furnishes a large share of the subsistence of predatory fishes, like the Black Bass and Perch.

CYPRINIDÆ. PLATE 2.

NOTROPIS MEGALOPS (*Rafinesque*)

HYPSOLEPIS PACHYSOMUS. Baird

The Common Shiner.

(Male.)

Fig. 1. Side view of skull.
2. Top view of skull.
3. Lower view of skull.
4. Rear view of skull.
5. Outline of section of body at dorsal fin.
6. Scale from the lateral line.
7. Scale from above the lateral line.
8. Scale from below the lateral line.
9. Lower pharyngeal bones, with teeth.
10. Right lower pharyngeal.
11. Outline of body from above.
12. Male fish, nearly adult.

CYPRINIDÆ. PLATE 3.

HYBOPSIS KENTUCKIENSIS (*Rafinesque*).

CERATICHTHYS BLENNIOIDES. Baird.

The Common Horny-head or River Chub; Indian Chub; Jerker.

Fig. 1. Side view of skull.
2. Top view of skull.
3. Lower view of skull.
4. Rear view of skull.
5. Outline of section of body at dorsal fin.
6. Scale from the lateral line.
7. Scale from above the lateral line.
8. Scale from below the lateral line.
9. Young example.
10. Outline of body seen from above.
11. Male example, not quite full grown.
12. Lower pharyngeal bones and teeth.
13. Right lower pharyngeal.

The Horny-head or River Chub is the most widely diffused of all our fresh-water fishes, abounding in almost all waters from New York to Montana, and southward to South Carolina and Texas. It frequents rivers and creeks rather small brooks. It has no economic value, but is often used as bait for the Black Bass.

CYPRINIDÆ. PLATE 4.

SEMOTILUS BULLARIS (*Rafinesque*).

CHILONEMUS CATARRHACTUS. Baird.

The Fall-fish, or Roach.

Fig. 1. Side view of skull.
2. Top view of skull.
3. Lower view of skull.
4. Rear view of skull.
5. Lower pharyngeal bones and teeth.
6. Right lower pharyngeal bone.
7. Outline of section of body before dorsal.
8. Scale from the lateral line.
9. Scale from above the lateral line.
10. Scale from below the lateral line.
11. Young example.
12. Outline seen from above.
13. Female example, nearly adult.

The Fall-fish frequents deep places in clear, cold streams from Quebec southward to the James River, its range not extending west of the Alleghanies. It is especially partial to the pool at the foot of a cascade. It reaches a larger size than any other of the *Cyprinidæ*, east of the Rocky Mountains specimens of from 16 to 18 inches long being sometimes taken. It is little valued as food. Thoreau says, "The Chub is a soft fish; it tastes like brown paper salted."

CYPRINIDÆ. PLATE 5.

SEMOTILUS ATROMACULATUS (*Mitchill*).

CHILONEMUS CEPHALUS. Baird.

The Horned Dace, or Creek Chub.

Fig. 1. Side view of skull.
2. Top view of skull.
3. Lower view of skull.
4. Rear view of skull.
5. Lower pharyngeal bones and teeth.
6. Right lower pharyngeal.
7. Outline of section of the body.
8. Scale from the lateral line.
9. Scale from above the lateral line.
10. Scale from below the lateral line.
11. Young example.
12. Outline of body seen from above.
13. A partly grown example, probably a female.

The Horned Dace is one of the commonest of our fresh-water fishes, abounding in all suitable localities from the Housatonic River to Montana, and southward to South Carolina, Tennessee, and Arkansas. It especially frequents small brooks and "spring-runs," in which streams it is often the largest inhabitant. It reaches a length of 8 to 10 inches.

ESOCIDÆ. Plate 1.

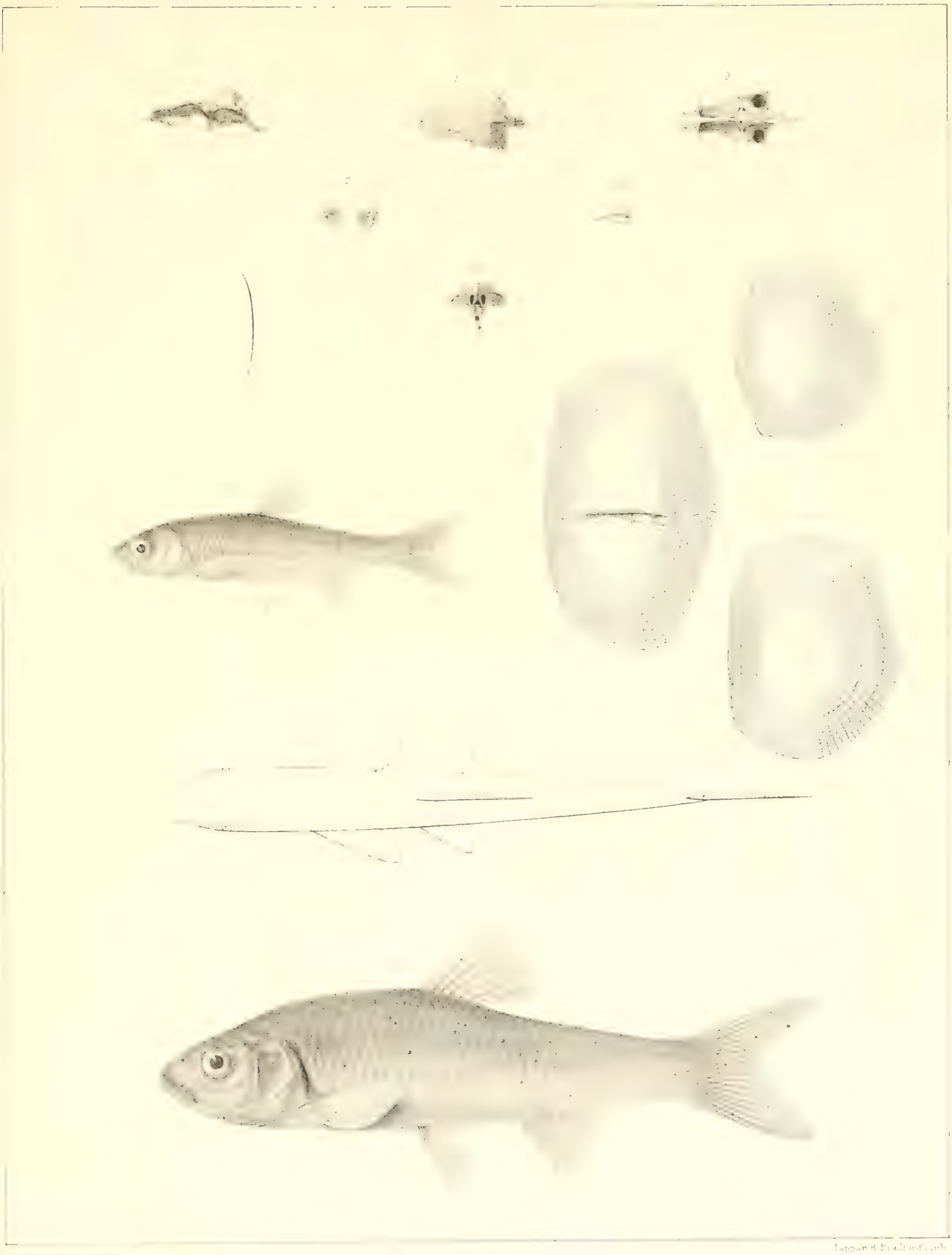
LUCIUS RETICULATUS (*Le Sœur*).

ESOX CLATHRATUS. Baird.

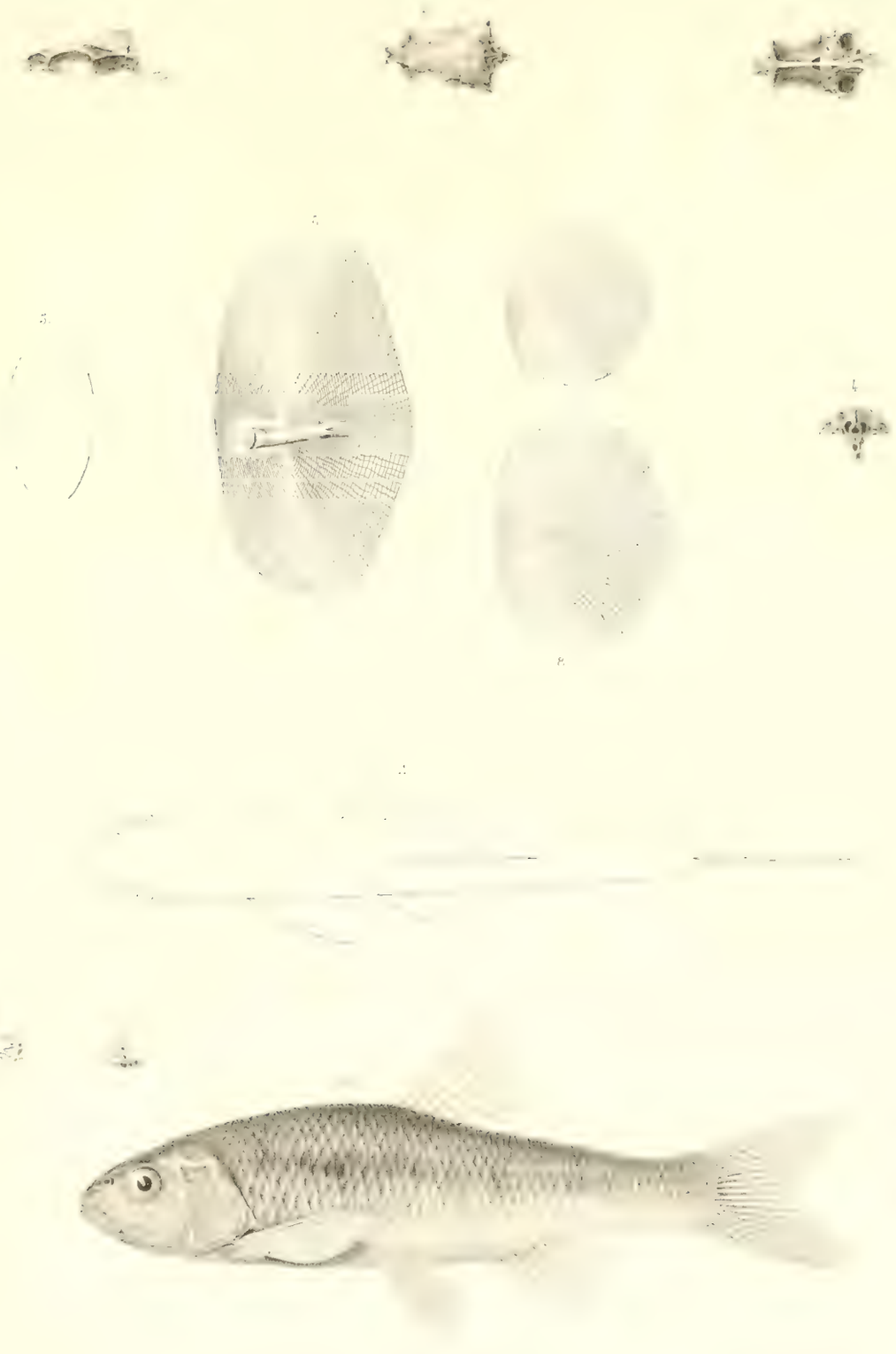
The Common Pickerel; Eastern Pickerel.

Fig. 1. View of roof of mouth from below, showing vomerine and palatine teeth.
2. Scale from the rudimentary lateral line.
3. Scale from above the lateral line.
4. Scale from below the lateral line.
5. Outline of section of body near the middle of the length.
6. Outline of body seen from above.
7. A young example.

The Pickerel is found in all lakes, ponds, and quiet waters east of the mountains, from Maine southward to Florida and Mississippi. It is a "solemn, stately, and ruminant fish," extremely voracious toward the little fishes which bask in its company among the lily pads. Like the other members of the Pike family, it is excellent as food, its white flesh breaking up, when cooked, into broad flakes.

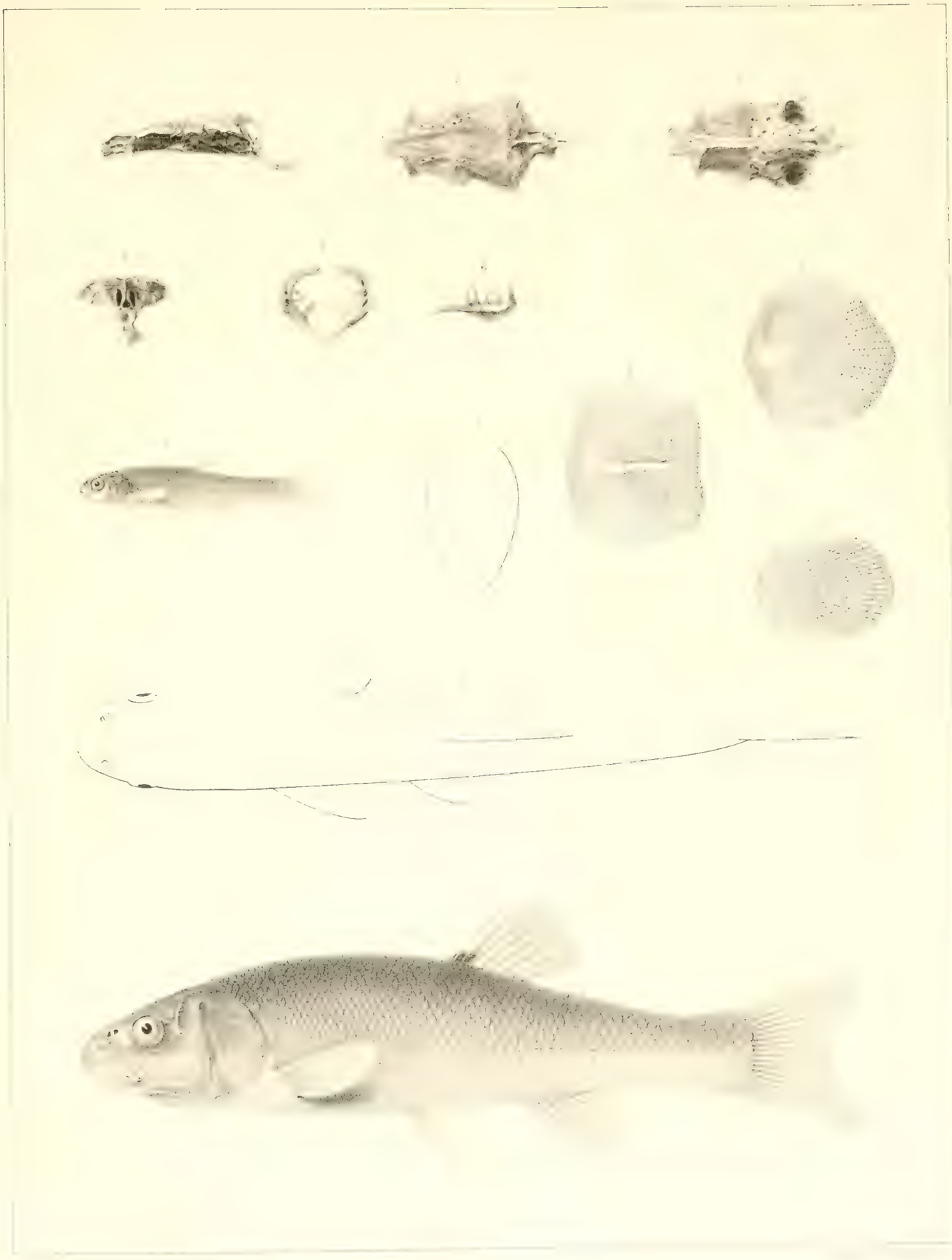


HYPSOLEPIS PLARGYRUS Baird



HYPSOLEPIS PACHYSOMUS Baird

CERATICHTHYS BLENNIOIDES Baird



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Natural history illustrations.